IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Patent Application

Inventors: Wu Chou et al.

Serial No.:   10/814081

Conf. No.:   5517

Filing Date: 3/31/2004

Art Unit: 2626

Examiner: Eric Yen

Docket No.: 633-001US

Title: Joint Classification for Natural Language Call Routing in a Communication
          System

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

PRE-APPEAL BRIEF REQUEST FOR REVIEW

The applicant requests review of the final rejection in the above-identified application.

Respectfully,
Wu Chou et al.

By **/Robert L. Greenberg/**
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Dear Sir:

PRE-APPEAL BRIEF REMARKS

Claims 1-18 were presented for examination were rejected. The applicants respectfully traverse the rejections and request reconsideration in light of the following comments.

The applicants respectfully submit that the cited prior art omits an essential element needed for a prima facie rejection. This element is the generation of a plurality of terms by combining at least one word and at least one **word class**. This plurality of words is then classified utilizing a joint classifier in order to best process language without the disadvantage of the prior art.

Because of this omission, the applicants respectfully request a panel review of the present application.

The illustrative embodiment as described in the present specification best demonstrates a novel feature of the present invention.

> [Word classes] are typically regarded as more robust than word terms, because the word class generation process can be viewed as providing a mapping from a surface form representation in word terms to broader generic concepts that should be more stable. _One problem associated with the use of word classes is that they may not be detailed enough to differentiate confusion cases in various NLP [natural language processing] tasks. Also, it may be difficult to apply word classes in certain situations, since not all word classes are robust, especially when speech recognition is involved. In addition, most word class generation is based on linguistic information or task dependent semantic analysis, both of which may involve manual intervention, a costly, error prone and labor-intensive process._ (page 2; lines 5-13 of the specification)
>
> . . . .
>
> The joint classifier determines at least one category for the plurality of words _based on application of a combination of word information and word class information to the plurality of words._ Words and word classes utilized to provide the respective word information and word class information for use in the joint classifier may be selected using information gain [IG] based term selection. (page 2, lines 23-27)
>
> . . . .
>
> A significant drawback of an automatic clustering algorithm such as that described above is that it can generate word classes that are not sufficiently useful or robust for NLCR [natural language call routing], NLU [natural language understanding] or other NLP applications. This problem is overcome in the illustrative embodiment through the use of the above-noted IG-based selection process, which selects words and word classes that are particularly well suited for NLCR, NLU or other NLP applications. **_By combining the resulting selected word information and word class information, the robustness and performance of the corresponding classifier is considerably improved_**. (page 9, lines 13-19)
>
> (_emphasis supplied_)

This robustness and improved performance, is a new and useful advantage over the prior art.

Accordingly, claim 1 recites:

> **1.** A method of processing a communication in a communication system, the method comprising the steps of:
>
> generating a plurality of terms by combining at least one word and ***at least one word class;***
>
> identifying a plurality of words contained within the communication; and
>
> classifying the communication containing the plurality of words by utilizing a joint classifier to determine at least one category for the communication based on application of the plurality of terms to the plurality of words ***without considering whether a given one of the plurality of terms is a word or a word class.***
>
> (*emphasis supplied*)

Nowhere does F. Segond, et al., US Patent 6,405,162 B1 (hereinafter "Segond") or the other references, alone or in combination, teach or suggest what amended claim 1 recites—namely generating a plurality of terms by combining at least one word and at least one word class and classifying the communication without considering whether the plurality of terms is a word or a word class. For this reason the applicants respectfully submit that the rejection of claim 1 is traversed.

Because claims 2-9 are dependent on claim 1, the applicants respectfully submit that the rejection of them is also traversed.

For these same reasons, the applicants respectfully submit that the rejection of claims 10-11 and 12-14, 15-17, and 18 are also traversed.

In conclusion, because the prior art references cited in the Office's rejection fail to comprise the claimed invention, the rejection is unsustainable. The applicants respectfully request that the present application proceed to issue.

Respectfully,
Wu Chou et al.

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